

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (Original) A method for modulating a person's autonomic function, the
2 method comprising:

3 interfacing a valve system to the person's airway, the valve system being
4 configured to decrease or prevent respiratory gas flow to the person's lungs during at least a
5 portion of an inhalation event;

6 permitting the person to inhale and exhale through the valve system, wherein
7 during inhalation the valve system functions to produce a vacuum within the thorax to transiently
8 decrease intrathoracic pressure and thereby modulate the person's autonomic function.

1 2. (Original) A method as in claim 1, wherein the valve system includes a
2 pressure responsive inflow valve, and further comprising setting an actuating pressure of the
3 valve to be in the range from about -2 cm H₂O to about -30 cm H₂O.

1 3. (Original) A method as in claim 2, further comprising setting the
2 actuating pressure of the valve to be in the range from about -3 cm H₂O to about -12 cm H₂O for
3 flow rates between about 30 to about 50 liters per minute.

1 4. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to decrease the person's heart rate and peripheral vascular tone.

1 5. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to increase blood flow back to the right heart of the person, thereby enhancing
3 vital organ perfusion and function.

1 6. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to increase heart rate variability.

1 7. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to decrease sympathetic tone.

1 8. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to reduce the person's anxiety level.

1 9. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to treat shock secondary to hypovolemia, sepsis and heart failure.

1 10. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to treat sleep disorders, wherein at least one of the sleep disorders comprises
3 apnea.

1 11. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to treat states of hypo-perfusion that are selected from a group consisting of
3 wound healing, stroke and diseases where blood flow is compromised, wherein at least one of
4 the diseases comprises coronary artery disease.

1 12. (Original) A method as in claim 1, wherein during inhalation the valve
2 system functions to improve blood flow to the muscles and brain, thereby reducing heart rate and
3 enhancing recovery from physical exertion.

1 13. (Original) A method as in claim 1, wherein the valve system is
2 incorporated into a facial mask or a mouthpiece, and further comprising coupling the facial mask
3 or the mouthpiece to the person's face.

1 14. (Original) A method as in claim 2, further comprising coupling at least
2 one physiological sensor to the patient to monitor at least one physiological parameter of the
3 person while breathing through the valve system, and varying the actuating pressure based on the
4 monitored physiological parameter.

1 15. (Original) A device for modulating a person's autonomic function, the
2 device comprising:

3 a housing having an opening that is adapted to be interfaced with the person's
4 airway; and

5 a valve system that is operable to regulate respiratory gas flow through the
6 housing and into the person's lungs due to inhalation, the valve system assisting in manipulating
7 intrathoracic pressures during inhalation to produce a vacuum within the thorax to transiently
8 decrease intrathoracic pressure and thereby modulate the person's autonomic function;

9 wherein the valve system is configured to permit respiratory gases to flow to the
10 person's lungs when the negative intrathoracic pressure reaches a pressure in the range from
11 about -2 cm H₂O to about -30 cm H₂O in order to modulate the person's autonomic function.

1 16. (Original) A device as in claim 15, wherein the valve system is
2 configured to permit respiratory gases to flow to the person's lungs when the negative
3 intrathoracic pressure reaches a pressure in the range from about -3 cm H₂O to about -12 cm
4 H₂O.

1 17. (Original) A device as in claim 15, wherein valve system comprises an
2 inflow valve that is selected from a group of valves consisting of a fish mouth valve, a spring-
3 poppet valve, a ball valve, a flexible plug valve, a slotted airway resistance valve, a movable disk
4 valve, a compressible airway valve, an iris valve and a sequential series of adjusting valves.

1 18. (Original) A device as in claim 15, further comprising at least one
2 physiological sensor that is attachable to the patient to monitor at least one physiological
3 parameter of the person while breathing through the valve system.

1 19. (Original) A device as in claim 15, further comprising a facial mask
2 coupled to the housing.

1 20. (Original) A device as in claim 15, further comprising a mouthpiece
2 coupled to the housing.

1 21. (Original) A method for assisting a person in recovering from physical
2 exertion, the method comprising:

3 interfacing a valve system to the person's airway, the valve system being
4 configured to decrease or prevent respiratory gas flow to the person's lungs during at least a
5 portion of an inhalation event;

6 permitting the person to inhale and exhale through the valve system, wherein
7 during inhalation the valve system functions to produce a vacuum within the thorax to improve
8 blood flow to the muscles and brain, and to reduce the person's heart rate.

1 22. (Original) A method as in claim 21, wherein the valve system includes a
2 pressure responsive inflow valve, and further comprising setting an actuating pressure of the
3 valve to be in the range from about -2 cm H₂O to about -30 cm H₂O.

1 23. (New) A method for treating a person, the method comprising:

2 interfacing a valve system to the person's airway, the valve system being
3 configured to decrease or prevent respiratory gas flow to the person's lungs during at least a
4 portion of an inhalation event;

5 permitting the person to inhale and exhale through the valve system, wherein
6 during inhalation the valve system functions to produce a vacuum within the thorax to treat
7 hypotension, shock secondary to hypovolemia, sepsis and heart failure.